Progress in Estimating Active Life Expectancy

Wednesday, October 9, 2002

9:00 a.m. to 4:30 p.m.

National Center for Health Statistics

6525 Belcrest Road, Hyattsville, MD

11th floor auditorium

9:00 a.m. **Welcome and Introduction**

Jennifer Madans, Associate Director for Science, NCHS

James Lubitz, Acting Chief, Aging Studies Branch, NCHS

Part I. Advances in Methods

9:30 a.m. **A New 2-Part Method To Estimate Active Life Expectancy**

Liming Cai, National Center for Health Statistics

The multi-state life table method is limited by several key assumptions about the underlying dynamic process. A two-part model is developed to yield new estimates of total and active life expectancy. Our study also highlights the potential of its application in more extensive studies of the dynamic patterns of disability and compares results from the 2-part model to a multi-state model.

9:55 a.m. **A Bayesian Approach to Estimating Multistate Life Tables with Covariates**

Scott M. Lynch, Princeton University

Traditional approaches to estimating multistate life table quantities do not readily allow the inclusion of covariates in estimation nor the construction of confidence

intervals on state expectancies. In this research, I develop a Bayesian approach for estimating multistate tables using Markov chain Monte Carlo methods applied to multivariate (possibly discrete time) probit models. The method is relatively easy to apply and is extremely flexible.

10:20 a.m. **Trends in disability transitions and their implications for active life expectancy**

Douglas A. Wolf, Syracuse University.

Most studies of active life expectancy have either used data on state transitions from a single period, or used longitudinal data on state transitions, but ignored intertemporal differences in transition patterns. A few studies have investigated trends in active life expectancy through comparisons of period-specific measures. A completely different strand in the literature investigates trends in the prevalence of disability, and has generally shown a downward such trend in the 1980s and 1990s. Missing from the literature is an attempt to tie these strands together; a downward trend in the prevalence of disability over (say) age 65 could arise because of (1) downward trends in disability onset rates, (2) upward trends in disability recovery rates, or (3) a reduced prevalence of disability among those reaching age 65. Varying mixtures of all three trends could, of course, lie behind the apparent reductions in disability prevalence since 1980. This study attempts to investigate these issues by introducing trend effects into a model of disability transitions. Such a model requires a longitudinal design with frequent follow-ups over a substantial follow-up period. We use the New Haven EPESE data, which come reasonably close to providing these features: baseline data were collected in 1982, with annual follow-ups through 1990 and an additional follow-up in 1994. The statistical basis for the analysis is a generalization of the embedded Markov chain approach found in Laditka and Wolf (1998). We find evidence of significant time trends in all model parameters.

10:45 a.m. **Break**

11:00 a.m. **Discussion and Questions**

Prepared Remarks: Yasuhiko Saito, Nihon University

12:15 p.m. to 1:15 p.m. **LUNCH**

Part II. New findings on active life expectancy and related issues

1:15 p.m.   **A Model to Estimate the Impact of Risk Factors and Medical Care Changes on Health and Health Care Costs**

Constantijn W.A. (Stan) Panis, RAND

This presentation discusses a microsimulation model that RAND developed for CMS. The model predicts health status and health care expenditures of individuals age 65 and older through the year 2020. Predicted health status is very detailed and includes cancer, heart disease, stroke, Alzheimer's, diabetes, lung disease, arthritis, hypertension, disability, and mortality. The model is capable of forecasting the effects of a medical breakthrough on a condition, related conditions, longevity, and health care expenditures.

1:40 p.m.   **Race Differences in the Burden of Heart Disease**

Mark Hayward, Pennsylvania State University.

2:05 p.m.   **Break**

2:20 p.m.   **The policy applications of different definitions of disability**

Eric Stallard, **Duke University**

Active and disabled life expectancy life-table models are frequently constructed using multipurpose survey data without fully considering the impact of varying disability definitions. While the reliability, validity, and cross-survey consistency of a limited set of disability definitions are emphasized, a larger set of disability definitions could accommodate a broader range of policy analyses. The policy issues are illustrated using the definitions of "chronically ill individuals" in the Internal Revenue Code (Sec. 7702B, relating to qualified LTC insurance contracts), "years of healthy life" in *Healthy People 2000*, and "employment disability" in the decennial Census. The choice of disability definition restricts the form of dynamic, but not static, life-table models that can be used in analyzing active and disabled life expectancy.

2:45 p.m.   **Discussion and Questions**

Prepared Remarks: Eileen Crimmins, University of Southern California

4:00 p.m.   **Conclusion and Next Steps**

Facilitator: Harold Lentzner